

SECTION 250.00 - DELINEATION, SNOW POLES AND OBJECT MARKERS

SECTION 251.00 DELINEATORS

251.01 Policy. Delineators shall conform to Section 3D of the latest approved version of the MUTCD. Application and materials are specified in the Idaho Standard Specifications for Highway Construction and Standard Drawing G-3.

251.02 Application. The general application policy will be as follows:

- Interstate: Full delineation
- Freeways and rural four-lane divided: Full delineation
- Other state routes:
 - o Use on restricted curves (posted with curve sign) and/or accident-prone locations.
 - o Use on transitions to islands, pavement widening for added lanes and/or lane drops.
 - o Can also be used for special applications for emphasis and motorist guidance.

The general policy is for minimum use because of high maintenance costs. If a special application is planned, the Traffic Engineer should approve it.

Use delineators for guidance, not as warning devices.

The Chevron Alignment sign (W1-9) may be used as an alternate or supplement to standard delineators. (MUTCD: 2C-10) NOTE: This sign is designated as W1-8 in the MUTCD.

SECTION 252.00 - DELINEATOR DETAILS

252.01 Types. Delineator types are listed in Standard Drawing G-3 and are described as follows:

Type 1 – Mono-directional with one single reflector.

Type 2 – Mono-directional with one double reflector.

Type 3 – Bi-directional with two single reflectors.

Type 4 – Bi-directional with two double reflectors.

Type 5 - Stub post on concrete guardrail – mono-directional - one single reflector.

Type 6 - Stub post on concrete guardrail – mono-directional - two single reflectors.

Type 7 - Stub post on concrete guardrail – bi-directional - one double reflector.

Type 8 - Stub post on concrete guardrail – bi-directional - two double reflectors.

Type 9 - Barrier delineator for side or top mounting on concrete guardrail or portable barriers.

Types 1-4 can be mounted on either rigid (steel or aluminum) or flexible posts. Post specifications are covered in Section [708.16 of the Idaho Standard Specifications](#). The list of approved flexible posts is maintained in the Headquarters Traffic Section.

252.02 Reflectors. Reflectors can be either prismatic reflex or retroreflective sheeting mounted on aluminum or other approved backing material. Section 712.04 of the Idaho Standard Specifications covers the materials to be used. Retroreflective sheeting will be Class B.

252.03 Spacing And Placement. Delineator spacing on horizontal and vertical curves and their lateral placement should conform to Standard Drawing G-3(m) (G-3). When delineators are required on both sides of a roadway, they should be staggered.

252.04 Delineation No! No! DO NOT use delineators for purposes other than roadway delineation. Do not use them for marking culvert ends, drop inlets or other objects in or adjacent to the roadway. Use object markers (OM-1, 2, or 3).

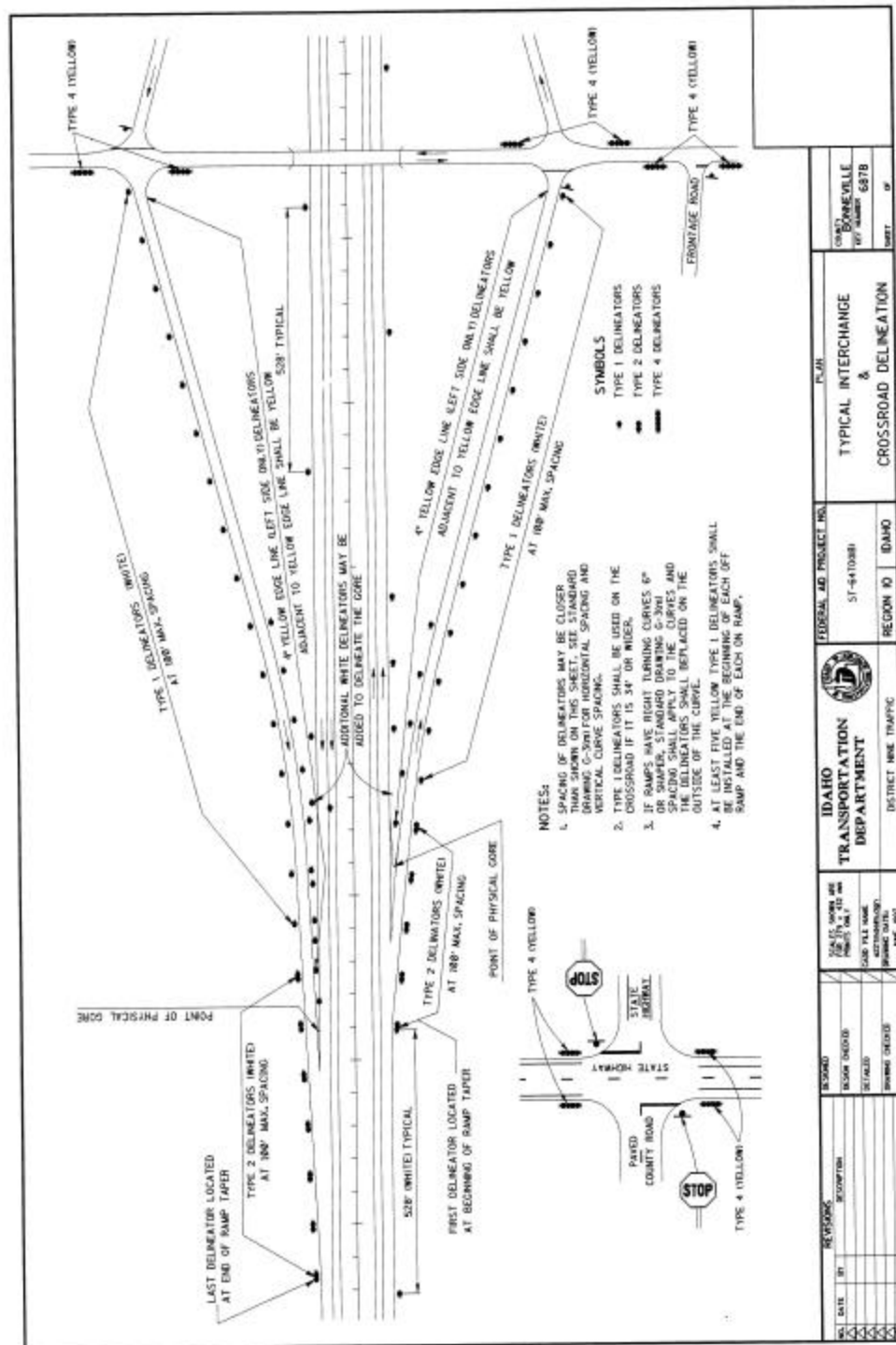
252.05 Acceleration And Deceleration Lanes And Ramps. All acceleration and deceleration lanes and freeway ramps should be delineated with delineators with a maximum spacing of 100 feet (30 meters). On curves, a closer spacing may be required as indicated by the spacing chart on Standard Drawing G-3(m) (G-3). Ordinarily, place the delineators on the right side of the ramp or lane. However, extreme curvature of 6 degree or more radius (less than 300 m) or other special considerations may require the delineation to be located on the opposite side or even on both sides of the ramp. Delineation at ramp terminals should be in accordance with Figure [252.05-01](#).

252.06 Extreme Curves And Special Conditions. Place Type 3 bi-directional white delineators on the left side of two-way roadways at extreme curves of 6 degree or more radius (less than 300 m) to the right. They may also be installed where it is not possible or practical to install and maintain right-hand delineation on both sides.

Shoulder, ditch maintenance and snow removal operations during the winter months in some locations make it desirable to temporarily remove delineators. In these areas, a demountable connection in the delineator post or snow poles may be used.

252.07 Median Openings. Median crossovers or openings on four-lane divided highways that are not illuminated should be marked with Type 2 yellow delineators. Locate the delineators on the left side of the through roadway on the far side of the crossover or opening for each direction of travel.

252.08 Intersecting Roads. Use Types 2 and 4 delineators to mark the limits of the intersection of other state highways or public roads with the highway. Figure [252.05-01](#) illustrates the placement of these delineators.



DESIGN INFORMATION:

- THE TYPE OF DELINEATOR POST (YELLOW OR WHITE) IS AT THE DISTRICT'S DISCRETION AND SHALL BE CALLED OUT IN THE PLANS.
- THE COLOR OF THE DELINEATORS SHALL BE CALLED OUT IN THE PLANS.

Figure 252.05-01 Typical Interchange And Crossroad Delineation (English)

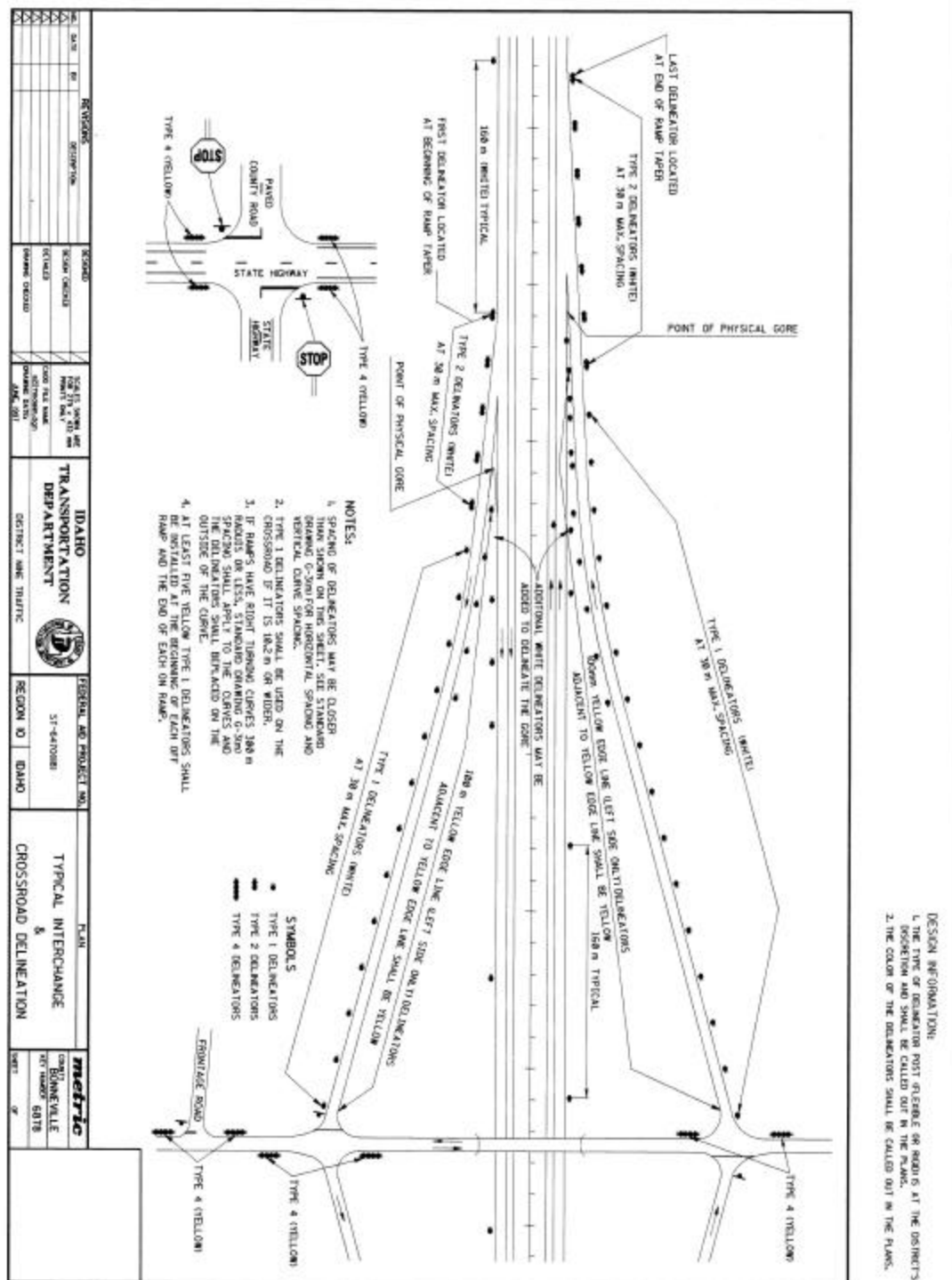


Figure 252.05-01M Typical Interchange And Crossroad Delineation (Metric)

Private approaches are not normally marked. However, if such approaches serve a large shopping center or similar area generating considerable traffic, delineators may be installed in the same manner as for public road intersections. If property owners desire delineators for their private approaches, they may use single amber bi-directional delineators (Type 3) on each side of the approach.

Delineator posts for private approaches shall be one of the following:

- Steel channel, galvanized or with a baked on enamel finish, 7 feet (2.1 m) long, 1.12 lb. per foot (1.67 kg/m) minimum weight.
- Aluminum channel with a minimum thickness of 0.094 inches (2.39 mm) conforming to ASTM B221, alloy 6061-T6 or 6063-T6, 7 feet (2.1 m) long.

Delineator posts for private approaches should be located in line with the highway delineator posts. If there are none on the highway, the private approach posts should be located 4-6 feet (1.2 -1.8 m) off the edge of the shoulder. The top of the installed delineator posts should be 48 inches (1.2 m) above the edge of the shoulder. If a mailbox is located adjacent to the private approach, the reflectors for that side of the approach should be mounted on the mailbox post at 48 inches (1.2 m) above the edge of the shoulder.

The property owner will install and maintain the posts and reflectors. Failure to maintain will be cause for removal. The finished installation will be inspected by ITD for compliance with these requirements. A permit will not be required to install the delineators.

252.09 Transitions. Equally space delineators used to mark transitions of roadway width at a distance in meters equal to 60% of the taper rate but not to exceed 100 feet (30 m) spacing. Delineator Type 2 is used on tapers for lane merges, acceleration lanes, and deceleration lanes.

When delineators are transitioned toward the roadway, they should be in a smooth line with spacing shortened so each delineator is not more than 2 feet (0.6 m) closer to the edge of traveledway than the preceding delineator.

Examples of the delineator treatment for narrow bridges are shown in Figures [167.01-01](#), [167.02-01](#), and [167.03-01](#) of the Traffic Manual.

252.10 Precast Concrete Guardrail. Precast concrete guardrail is a fixed, continuous, and physical object in close proximity to the travel lane and should be delineated with reflectors mounted on the top or near the top on the face of the concrete guardrail. A maximum spacing of 50 feet (15 m) is desirable throughout the length of the concrete guardrail.

The end sections of the guardrail should be marked with retroreflectorized paint, reflectors or object markers. See Section [271.03](#) for more information.

Refer to Section [281.07](#) for the use of pre-cast guardrail as a portable barrier.

252.11 Rigid Vs. Flexible Posts. Normally use steel or aluminum channel posts for delineators as indicated on Standard Drawing G-3. In areas where the post is exposed to a risk of being hit repeatedly, particularly in gore areas, a flexible, self-erecting or yielding type of post should be considered for installation in place of the steel or aluminum channel post.

Flexible posts with retroreflective sheeting and rigid posts with reflector buttons should not be mixed at intersections.

252.12 Delineation Plans. The plans for new construction and major maintenance operations should show type of delineator (1 through 9), color of reflector (white, red, or yellow), and type of post material (rigid or flexible).

Show the number of delineators and proposed spacing on either the roadway plans or the traffic plans.

252.13 Truck Escape Ramps. Red and white object markers (OM-3) may be used to delineate the entrance to a truck escape ramp and provide guidance along the ramp. See Figures [168.01-02](#) and [168.01-03](#) for typical delineation application.

252.14 Marking Of Guardrail Ends And Permanent Crash Attenuator Installations. When guard rail ends and permanent crash attenuators are considered a hazard, they should be marked to warn motorists using the following criteria :

- Guardrail ends should be marked when non-flare ends lie within 8 feet (2.4 meters) of either edge of the travel lane on two way roadways or within 13 feet (4.0 meters) of the outside shoulder of one-way of one-way highways.
- Guardrail ends should be marked when flared ends are within 8 feet (2.4 meters) of either edge of the travel lane on two way roadways or within 13 feet (4.0 meters) of the outside shoulder of one-way highways. Place the object marker behind or above the guard rail post where the flare begins.
- Mark guardrail ends in the “downstream” direction of two-way roadways when:
 - There is an accompanying marking on the guardrail end in the opposite lane on the upstream end, or
 - When the need is established by the Department.
- All permanently installed crash attenuators should be marked.
- Current object/hazard marker installations should be updated if required due to safety concerns, deterioration or accident damage.

If it is determined that object/hazard markers are required, the following guidelines shall be used as methods of mounting:

- The preferred method of marking guard rail ends is with an OM-301Y R or L (12 x 18) attached to the face of the guardrail end (i.e. pop-riveted or bolted).

- The OM-301Y R or L (12 x 18) may be attached to the guardrail post nearest the guardrail end (i.e. bolted). The OM-301 should be attached in a manner that allows it to extend to full height above the top of the guardrail.
- The OM-301Y R or L (12 x 18) may be placed on a standard delineator post and installed on the tangent section (per direction of travel) near the guardrail end, in a position, directly behind the guardrail post and away from the travel lane.
- Factory crash attenuators shall have the reflective object marker sheeting installed as per factory specifications at the time of installation. All markings shall be in place and properly positioned to guide the motorists into the travel lanes and away from the crash attenuators.

Object/hazard markers should not be used in areas where the motorist may mistake them for guidance in extreme weather conditions and be directed off the roadway.

Districts can use standard object/hazard markers OM-3Y (12" x 36") by shearing them in half to make the OM-301Y (12" x 18") guardrail markers. Standard OM-3Ys can be obtained from the Central Sign Shop.

SECTION 253.00 - MAINTENANCE

253.01 Night Checks. Incorporate nighttime checks of delineation into routine night reviews of signing and other work. It is particularly important to view new installations at night where curvilinear alignments are involved. In these cases it is possible to have the delineators so positioned as to give a false impression of where the road leads. Adjust the spacing on curves so that at least three delineators will be visible at all times. Thus, a night review could result in the relocation and/or addition of some delineators.

253.02 Replacement. Delineators on curves, transitions and intersections should be repaired or replaced within 180 days.

The Department policy for level of maintenance is covered in Administrative Policy [A-05-07](#) and Section [300.01 of the Maintenance Manual](#).

SECTION 261.00 - SNOW POLES

261.01 General. Install snow poles where the snow frequently exceeds 2 feet (0.6 m) in depth or where drifting snow conditions are prevalent. They are not normally required on tangent sections.

Spacing and installation should conform to the requirements set forth on Standard Drawing G-4. On crest vertical curves the spacing may be adjusted so three snow poles are visible at any one time.

Install snow poles with white retroreflective sheeting on the right side of the roadway. Install snow poles with yellow retroreflective sheeting on the left side to mark intersections and median crossovers when required.

On specified highway sections it may be permissible to decrease the number of snow poles by installing them only on the outside edge of the roadway, providing the inside edge is adequately delineated by terrain (mountain side slope) to protect against a vehicle leaving the roadway.

SECTION 271.00 - OBJECT MARKERS

271.01 General. Object markers shall conform to the policy set forth in Sections 3C and 9C-9 of the MUTCD and the following subsections.

271.02 Objects Adjacent To Roadway. Obstructions located beyond a line 8 feet (2.4 m) outside the shoulder edge will not normally need to be marked by object markers unless special conditions indicate a need.

271.03 Hazards In Or Near The Roadway. To mark unexpected temporary hazards in or near the roadway such as roadway break-up, frost heaves, eroded shoulder, or other problems requiring maintenance, use an OM-1 object marker.

Large hazards such as exposed bridge abutments or bridge piers, exposed bridge rail ends, underpasses, etc., should be marked with the OM-3 object marker. Guardrail terminal ends should be marked only when the rail is parallel to the roadway and when ends are within 8 feet (2.4 m) from the edge of the travel lane. Shoulder drop-offs, ends of large culverts, and culvert headwalls should be marked with either OM-2 or OM-3 object markers. For raised gore and median islands, use either OM-1 or OM-3 markers. Appropriate signs, R4-7, R4-8, or W12-1, directing traffic to one or both sides of the obstruction may be used in lieu of, or in addition to, an object marker.

DO NOT use object markers as delineators.

271.03.01 Impact Attenuators

Impact attenuators are objects near the roadway and therefore should be delineated. Alternating black and yellow stripes up to 12 inches (300 mm) in width sloped at 45 degrees downward toward the side which traffic will pass, similar to Type 3 object markers, should be installed on the nose of the attenuators.

271.04 Mounting Height. The mounting height to the bottom of the object marker should normally be 4 feet (1.2 m) above the surface of the nearest traffic lane. When used to mark objects more than 8 feet (2.4 m) from the shoulder or curb, the mounting height to the bottom of the object marker may be 4 feet (1.2 m) above the ground.

When object markers or markings are applied to a hazardous object which by its nature requires a lower or higher mounting, the vertical mounting height may vary according to need.

271.05 End Of Roadway. Note that highway construction frequently terminates a roadway so there is no alternative vehicle path. These road terminations shall be marked with the End of Road Marker, MUTCD, Section 3C-04.

SECTION 281.00 - BARRICADES AND CHANNELIZATION DEVICES

281.01 General. Barricades, cones, tubular markers, vertical panels, drums, and portable barriers are important visual tools that are available to help guide a motorist through a construction area or abrupt transition or provide protection from a hazardous condition.

Apply these devices along with signing and pavement marking, so there will be no surprises to an unfamiliar traveler. Transitions should be smooth.

Section 6F of the MUTCD covers the use of these devices on construction and maintenance operations.

Type I barricades, Type II barricades, cones, tubular markers, vertical panels, drums, and portable barriers may all be used as channelizing devices.

The traffic control plan should show which of these channelizing devices is to be used or if more than one alternate may be used.

281.02 Barricades. Barricades used for construction and maintenance operations are orange and white and are covered in Part 6F-60 of the MUTCD. This includes the design and materials used as well as the applications.

Use a Type III barricade (three rails) with red and white stripes at the termination of a road or alley or where a road or ramp operation is permanently closed. (MUTCD: 3F-01)

Both colors on the rails of barricades will be retroreflectorized. Use Class B sheeting.

281.03 Cones. The primary use of cones is to divert or channelize traffic for short duration. They are effective if applied properly and are easy to transport and safe to use. They give important guide information to the motorist when required to move from his normal driving path.

Cones shall be 28-inch (710 mm) minimum height with color and material as specified in Section 6F-56 of the MUTCD. Cones shall be retroreflectorized for night use. Use retroreflectorized white bands to aid night visibility. However, lights, barricades, or barrels should give the primary nighttime direction.

281.04 Tubular Markers. The principal use of tubular markers in Idaho is for separation of traffic on freeway construction projects that have two-way operation on a normally one-way roadway. They can also be used to divide traffic lanes when two or more lanes are kept open in the same direction, and to delineate the edge of pavement drop-off where space limitations do not allow the use of larger devices.

Tubular markers shall be orange or fluorescent orange plastic, 36 inches (910 mm) minimum height, 3.5 inches (85 mm) minimum width when facing the traffic. Bases shall be either weighted or attached to the roadway with an approved adhesive. Headquarters Traffic will approve new products for tubular markers before they are listed for use. A list of approved units are maintained by the Traffic Engineer.

Tubular markers shall be retroreflective for nighttime use. Retroreflectorization will be a minimum of two 3-inch (75 mm) white bands of Class B sheeting placed 2 inches (50 mm) maximum from the top, with a maximum of 6 inches (150 mm) between bands.

See Section 6F-57 of the MUTCD.

281.05 Vertical Panels. See Section 6F-58 of the MUTCD.

281.06 Drums. See Section 6F-59 of the MUTCD.

281.07 Portable Barriers. Portable barriers such as concrete guardrail or water-filled plastic barriers may be used to prevent penetration from the traveled way to work areas behind the barrier and may also be used to separate two-way traffic. The barriers also serve an additional function of channelizing traffic. However, the protective requirements of the work area, and not the channelizing needs, should govern the decision regarding the use of portable barriers.

Portable barriers shall be supplemented by standard delineation, markings, or channelizing devices for nighttime use. Warning lights may be mounted on portable barriers. When warning lights are used, only the first two yellow warning lights at the start of a continuous barrier may be Type A flashing. Others shall be Type C yellow steady-burning for channelization.

Additional information on the use of portable barriers is contained in Chapter 9 of the AASHTO Roadside Design Guide.